NWT Species at Risk

PUBLIC
DISCUSSION DRAFT

Action Plan

Boreal Woodland Caribou Conservation in the Northwest Territories 2009–2014

OCTOBER 2008 | Prepared by the Department of Environment and Natural Resources

We still want to hear from YOU!

Biologists from Environment and Natural Resources held meetings with wildlife co-management boards and in almost every community in the Northwest Territories (NWT) to provide elders, community members and organizations an opportunity to have input into the *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories*. Twenty-three specific actions have been identified to help conserve boreal caribou and the Action Plan is now ready for public review.

There is still time to make your opinions heard and answer the following questions:

- *Are these goals appropriate for the conservation of boreal caribou in the NWT?*
- *Do these actions address the threats facing boreal caribou in the NWT?*

By **December 31, 2008**, please contact your local Environment and Natural Resources office or:

Director, Wildlife Division
Department of Environment and Natural Resources
Government of the Northwest Territories
P.O. Box 1320, 5th Floor Scotia Centre
Yellowknife, NT X1A 2L9
Tel: (867) 920-8064
Fax: (867) 873-0293
E-mail: speciesatrisk_borealcaribou@gov.nt.ca
Visit: www.nwtwildlife.com

Introduction

The *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* contains general goals and direction for conservation of the boreal population of woodland caribou (boreal caribou) in the NWT. The purpose of this Action Plan is to outline actions management authorities in the NWT can take to help conserve boreal caribou. These actions are based on the best traditional, local and scientific knowledge available and are subject to change to accommodate new information and objectives. The actions identified in this document support the 16th NWT Legislative Assembly's goal of *"an environment that will sustain present and future generations"* and priority to *"coordinate our efforts to ensure development is sustainable for our land and wildlife"*. Implementation of these actions is subject to the priorities and budgetary constraints of the management authorities.

Goals

Recognizing that boreal caribou, like other wildlife, are ecologically, culturally and spiritually valued in the NWT, the goals for the conservation of boreal caribou are to:

1. Prevent boreal caribou from becoming a species at risk[1] in the NWT as a result of human activities.
2. Maintain the current contiguous distribution of boreal caribou in the NWT, for the benefit of all NWT residents and future generations.
3. Manage boreal caribou as envisioned in the *Recovery Strategy for the Woodland Caribou Boreal Population, in Canada* (Environment Canada, in prep.) and to contribute to the biodiversity of the NWT.

Implications of these goals are:

1. To maintain the current distribution and habitats of boreal caribou we need to manage natural and human impacts at the landscape level.
2. The scale and extent of development activities may have to be regulated or managed to maintain effective habitat for boreal caribou in perpetuity, including habitat connectivity.
3. A better understanding of the combined effects of natural and human impacts and predation (including harvest) on boreal caribou population dynamics is needed.
4. Boreal caribou harvest monitoring and predator management may be required in some areas to maintain self-sustaining boreal caribou populations.
5. Population trends for boreal caribou will have to be determined to ensure population numbers remain within the natural range of variation.
6. The conservation of boreal caribou in the NWT can only be achieved with the cooperation and support of First Nations, NWT wildlife co-management boards, the Tłı̨chǫ Government and NWT residents.

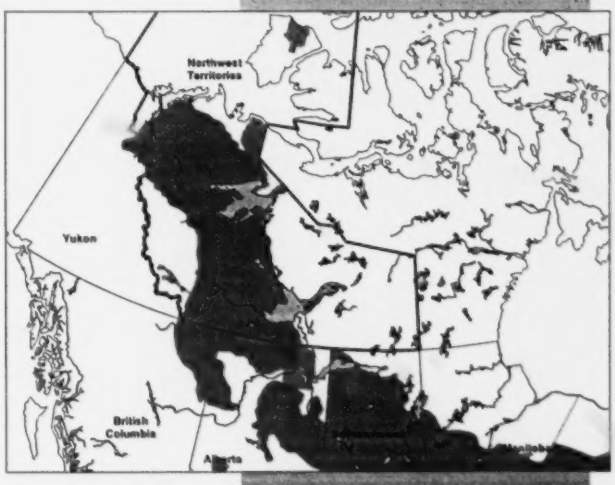
[1] *According to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), a species may be determined at risk if there is a declining total population over three generations or 10 years, whichever is longer, OR a small distribution with a decline or fluctuation in numbers, OR a small total population size with a decline in number, OR a very small or restricted number of mature individuals with a restricted area of occupancy and other factors. There are more specific criteria that accompany these provisos. Consult www.cosewic.gc.ca for more details.*

Background

Boreal caribou exist across much of Canada. Habitat loss and reduced distribution in southern Canada contributed to the federal government listing boreal caribou as *Threatened* under the federal *Species at Risk Act*.

Although the federal listing of boreal caribou applies throughout Canada, boreal caribou in the NWT are not considered to be currently at risk. The NWT General Status Ranking Program ranked boreal caribou as "*Sensitive*". This designation is for species that are not at risk of extinction or extirpation but may require special attention or protection to prevent them from becoming "*At Risk*"[2]. Based on traditional knowledge and scientific studies, there are an estimated 6,000 to 7,000 boreal caribou in the NWT, which still occupy much of their historic range.

Because of the federal listing, a national *Recovery Strategy for the Woodland Caribou, Boreal Population, in Canada* (Environment Canada, in prep.) was developed. Each jurisdiction in Canada with boreal caribou (the NWT, along with British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland-Labrador) helped develop this recovery strategy and made a commitment to develop and implement their own Recovery Strategies or Action Plans to address specific boreal caribou recovery or management concerns in their jurisdiction.



In the Northwest Territories boreal caribou are found throughout the boreal forest of the Mackenzie River basin.

[2] *Consult the NWT Species Monitoring Infobase for more details: www.nwtwildlife.com/ENR_Infobas/asp/Search.asp*

Threats

Photo by Mike Bly

Photo by Richard Popko

Photo by Bayan Tracz

To help identify threats to boreal caribou in the NWT, and actions to address those threats, meetings were held with wildlife co-management boards and in almost every community in the NWT. The threats identified included:

- Direct loss of habitat through landscape change resulting from human activities;
- Landscape changes caused by wildfire and other natural disturbances;
- Avoidance or reduced use of specific areas of habitat as a result of disturbances caused by human activities;
- Vehicle collisions;
- Parasites and disease;
- Predation, including changes in the numbers and densities of predators and alternate prey species; and
- Harvesting.

Recommended Tools and Actions to Address Threats

A. Population Monitoring and Management

At almost every community meeting about boreal caribou in the NWT, people supported continued monitoring of boreal caribou populations. Population monitoring is needed to guide management decisions and generate data on boreal caribou ecology.

Action 1
Establish long-term monitoring (repeated efforts over multiple years) of adult female mortality and calf survival to determine whether local boreal caribou numbers are increasing, decreasing or stable. This may include putting radio, satellite or GPS collars on adult cows.

Action 2
In areas of the NWT where development is occurring and where specific boreal caribou range management plans are being developed, monitor the harvest to ensure boreal caribou populations remain sustainable (see *Action 5*).

Action 3
In cooperation with harvesters, collect samples and comments (a piece of hide from their harvest, along with location, sex, numbers seen) and establish ongoing DNA analyses to better understand how boreal caribou use the landscape.

Action 4
Determine and monitor boreal caribou population trends in each settlement region and/or in each area identified in *Action 7*. The current population estimate for boreal caribou in the NWT was derived using density estimates obtained in study areas where all boreal caribou were observed while tracking radio-collared caribou or were counted during aerial surveys. These density estimates were used to estimate the number of caribou in all regions within the range of boreal caribou in the NWT.

Photo by John Nagy

Photo by John Nagy

B. Habitat Planning and Management

Environment and Natural Resources monitors natural habitat changes and disturbances associated with climate change and will continue to do so. The implications of climate change will be worked into actions when appropriate and as new information becomes available. A changing climate may have unforeseen effects on boreal caribou habitats and populations and may result in changes northern regulators and managers have little to no ability to control.

The *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* takes a landscape perspective. Many communities, particularly in the South Slave and Dehcho Regions, know of areas that are important for boreal caribou (i.e. Cameron Hills) and understand landscape changes caused by wildfires or human activities, including industry, could affect boreal caribou. Traditional knowledge and scientific studies have shown that boreal caribou in the NWT need large areas of suitable habitat to range over. To conserve boreal caribou in all areas of the NWT, land use activities may have to be restricted or limited over large tracts of habitat. Industry and other human activities could still occur within boreal caribou habitat if these activities, when considered along with natural habitat change, are compatible.

Action 5

Prepare and implement comprehensive range management plans for specific areas of boreal caribou habitat. Specific range management plans will provide guidance for the regulation of proposed and ongoing land use activities and development projects.

Action 6

Support the establishment of conservation zones within the NWT through regional land use planning processes and the NWT Protected Areas Strategy.

Action 7
Define (when necessary) special zones, regions or areas, identify acceptable levels of habitat change within these areas, and regulate the level of access and disturbance on annual or seasonal boreal caribou ranges. This management approach may be particularly important in regions where oil, gas and timber developments are proposed or are currently ongoing, or to meet other conservation objectives.

Action 8
Continue to monitor distribution of boreal caribou using a combination of traditional knowledge and scientific studies to monitor movements. This may include use of resource selection modelling, or other data modelling analyses, to identify seasonally preferred habitats and responses to human disturbance.

Action 9
Determine vegetation regeneration rates and patterns for various types of disturbances across different habitat types and environmental conditions in the NWT.

Photo by Boyan Tracz

C. Disturbance Management

Many NWT residents stated concerns about the effects of oil, gas and timber development as well as other smaller scale land use activities such as agriculture, tourism and mining, and the cumulative effects of these activities on boreal caribou. Of particular concern, from Inuvik to Hay River, were the effects of noise on boreal caribou (i.e. from pump stations or highway traffic), collisions with highway traffic and the apparent effects of cutlines or corridors on boreal caribou, their predators and other prey species. Management of these threats needs to be proactive to ensure the continued existence of boreal caribou in the NWT.

Action 10
Monitor the response of boreal caribou to land use activities, where appropriate, by tracking their movements and habitat use in relation to land use activities.

Action 11
Where possible, identify and map the impacts of various types of land use on boreal caribou range and habitat. Maintain a current database of all human disturbances on boreal caribou range, including seismic lines, roads, well sites, mine sites, transmission lines, trails, cutlines, forestry blocks, land leases and collision locations with highway traffic.

Action 12
Define what makes an effective travel corridor for predators. This may involve mapping the extent of vegetation regeneration of older cutlines and the locations of all recent cutlines to determine the stage of regeneration where a cutline or seismic line is no longer an effective travel corridor for predators. In some cases, defining corridors will have to be done on the ground, on a site-by-site basis.

Action 13
Develop best practices guidelines or regional strategic access management land use plans for industrial and commercial activities to manage or reduce/mitigate habitat impacts and sensory disturbances on boreal caribou.

Action 14
Identify appropriate thresholds at a scale relevant to boreal caribou in the NWT for specific regions or important habitat areas. In areas where high levels of disturbance have already occurred on boreal caribou habitat, the feasibility of establishing temporary thresholds for the acceptable amount of linear features, human developments and natural habitat change should be immediately assessed.

Photo by John Nagy

D. Interaction with Other Wildlife Species

In every community in the southern portion of the NWT where discussions about boreal caribou were held, residents reported that new species are appearing and they expressed concerns about the interactions of these new species with existing wildlife. New species can bring new parasites and diseases. Local knowledge suggests the range of boreal caribou in the NWT has not significantly changed over time, with the exception of a few localities where densities of boreal caribou have decreased. These include areas where wood bison were introduced (Mackenzie Bison Sanctuary and surrounding areas) or where boreal caribou were over-hunted (e.g. Pine Point area). However, community residents consistently said there are definite interactions between boreal caribou and other wildlife (beavers, wood bison, muskoxen, wolves and bears) that are changing the local caribou distributions in many areas.

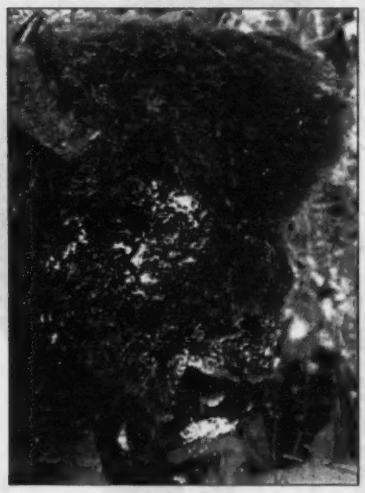


Photo by Gordon Court

Action 15

Confirm the applicability of identified effects from other wildlife species in other jurisdictions for the NWT.

Action 16

Track trends of other ungulates and carnivores (for example: moose, white-tailed deer, beaver, bison, muskox, wolves, coyotes, cougar, wolverine and lynx) in boreal caribou ranges with industrial activity, or in each area identified in *Action 7.* Include information from communities and industrial companies.

Action 17

Monitor and identify boreal caribou diseases and parasites.

E. Stewardship and Outreach

A clear message in community meetings was that the conservation of boreal caribou and their habitat in the NWT is the responsibility of all residents. This Action Plan has taken community and traditional knowledge and opinions into consideration. The Action Plan will only be successful if knowledge and experience, both local and from elsewhere, continues to be shared. As we gain more information, this Action Plan will be adjusted and may be complemented by additional Action Plans. At a minimum, the Action Plan will be updated every five years.

Action 18
Involve community members in boreal caribou monitoring, conservation actions and field research.

Action 19
Provide better recognition of existing and future cooperative work between the Department of Environment and Natural Resources and First Nations or other agencies.

Action 20
Promote awareness and knowledge of boreal caribou and boreal forest ecosystems among the public and industry operating within boreal caribou range in the NWT.

Action 21
Encourage NWT participation at national and international conferences on caribou to foster learning and networking opportunities.

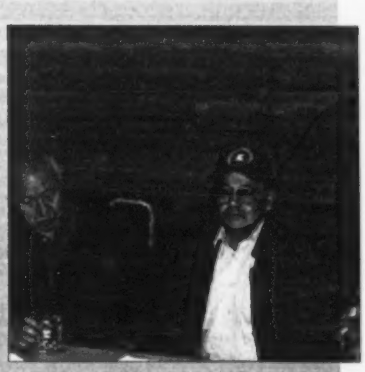


Photo by ENR

Photo by Dean Cluff

F. Legislation, Policy and Review

The Minister of Environment and Natural Resources is ultimately responsible for the implementation and progress of the *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories*. However, the support of all people living and working in the NWT is needed to achieve the goals stated in this Action Plan.

Action 22

With co-management partners, review legislation and policy in the NWT and enact regulations or directives to protect boreal caribou as needed.

Action 23

Following the five-year time frame of this Action Plan, the Minister will prepare a report on the progress made towards meeting the goals, evaluating the status and outcome of each action, and updating the plan as needed.

GLOSSARY

Boreal caribou (*Rangifer tarandus caribou*) – Caribou that live in the boreal forests of Canada. Boreal caribou are genetically different from migratory barren-ground and behaviourally different from mountain woodland caribou. Genetically, boreal and mountain caribou are similar and are considered to be the same subspecies; they differ primarily in 'lifestyle'. Mountain caribou herd in groups that may number in the thousands and have different seasonal movement patterns. Boreal caribou tend to live in small groups and prefer different habitat types than mountain caribou.

COSEWIC – The Committee on the Status of Endangered Wildlife in Canada. This is a committee of experts that assesses and designates which wild species are in some danger of disappearing from Canada. Traditional knowledge is included, wherever possible, in making species assessments.

Cumulative effects – Changes to the environment caused by an action, in combination with other past, present and future actions. For boreal caribou in the NWT, the largest anticipated management challenge involves the impacts of oil and gas development, along with other land use activities such as forestry, tourism and mining, and all of their interactions (or cumulative effects of all the impacts).

Endangered species – A species facing imminent extirpation or extinction.

Extinct – A species that no longer exists.

Habitat – The area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly to carry out its life processes.

Habitat loss – Permanent changes to habitat that results in no current or future value for a species (e.g. conversion to agriculture, human settlement).

Historic range – Those geographic areas that a species was known or believed to occupy in the past.

Linear features – Any long, narrow area that has been cleared of vegetation or otherwise modified. Examples such as a road, trail, seismic line or right of way are modifications to the landscape which are typically placed to provide access of one form of another. Features can range in length and width, but all are considered a corridor of some sort.

Range – The geographical limits of a species or group; a migratory species usually has both a breeding range and a wintering range.

Recovery – The restoration of a species to self-sustaining population level, able to withstand random events and other environmental variables. This implies that human activities can be managed and/or habitat restored to allow a species to exist with no or little direct management.

Recovery strategy – An outline of population goals, objectives and approaches to be taken to reduce the threats to the survival of an *endangered* or *threatened* species and encourage recovery.

Sensory disturbance – Direct displacement or disruption to individual wildlife by people and their activities by the way of dust, sound, odour, vibrations, etc.

Stewardship – Actions to care for the environment, ranging from conserving wild species and their habitats directly to improving the quality of habitat by mitigating human impact. These types of conservation activities are essential to the recovery of species at risk and instrumental in preventing other species from becoming at risk.

Threatened species – A species likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

APPENDIX 1

Conservation and Management Activities Already Completed or Underway in the Northwest Territories

- Predicted late winter boreal caribou habitat was mapped at a regional landscape level in the Dehcho land claim area using resource selection functions. Additional winter surveys in the Edehzie and Trout Lake areas have been flown to refine and validate this model.
- Boreal caribou distribution and habitat use was assessed in the northern Mackenzie River Valley (Inuvik and Sahtu Regions) using a mixture of satellite radio collars and GPS-satellite radio collars. Boreal caribou habitat suitability maps are currently being developed for the Inuvik and Sahtu Regions using resource selection functions. Inuvik and Sahtu studies were initiated in April 2002 and March 2003, respectively.
- Population trend (adult female survival and calf recruitment) is currently being monitored in the northern Mackenzie River Valley using a mixture of conventional VHF collars, satellite radio collars and GPS-satellite radio collars. Study was initiated in March 2004.
- Population trend (adult female survival and calf recruitment) is currently being monitored in an area to the west of Hay River using a minimum sample size of 30 conventional VHF collars. Boreal caribou distribution and habitat use will also be determined, and predicted boreal caribou habitat will be mapped using resource selection function. Study was initiated in March 2003.
- A combination of satellite, GPS-satellite and conventional VHF collars have been deployed throughout the Mackenzie Valley in the Dehcho Region to assess boreal caribou distribution, daily/seasonal movements and home ranges and population trend by measuring adult survival and calf recruitment. These data will be used to produce regional maps and as part of the territorial-wide maps of resource and habitat selection

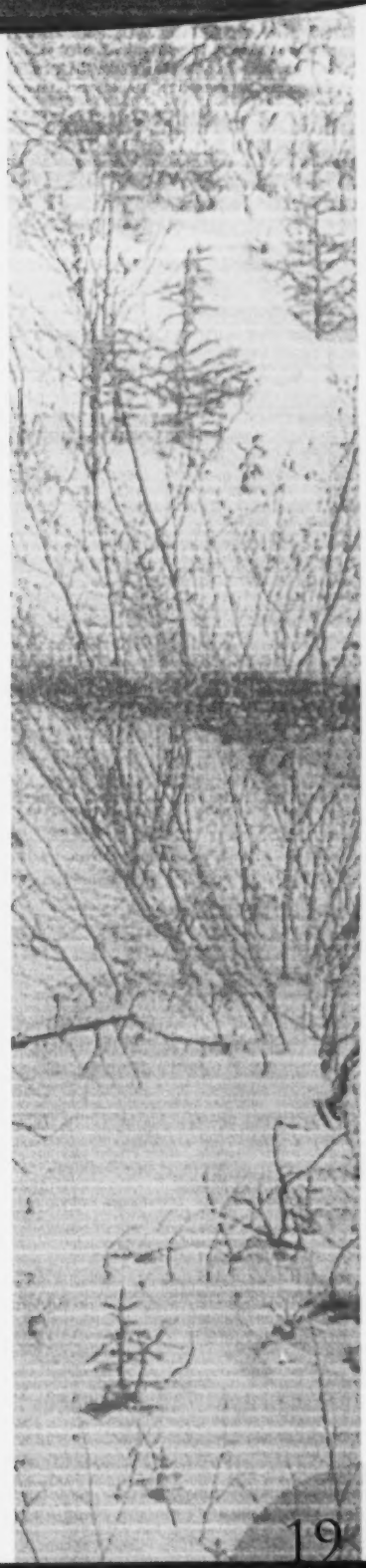
based upon RSF modelling. The study was initiated in 2004, with 10 collars deployed in the Trout Lake traditional areas and expanded to include traditional areas of Fort Simpson, Jean Marie River, Wrigley and Nahanni Butte over 2005/2006. Since 2006 there has been an average of 30 active collars on female caribou in the study, with no more than four being conventional VHF collars. More collars will be deployed in February 2009.

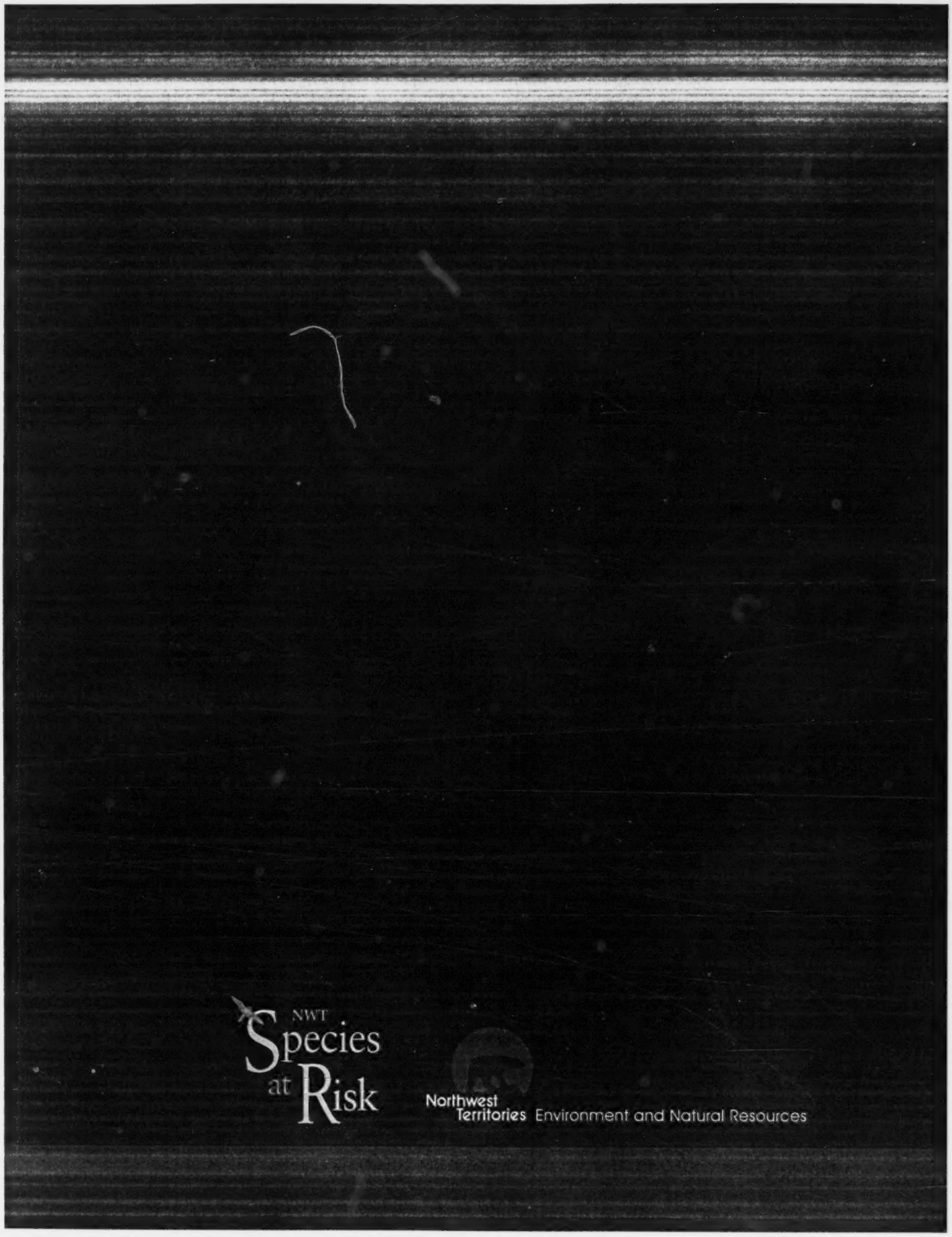
- Baseline information on pregnancy rates, and parasites and disease is being collected in conjunction with studies that use radio collars in the Dehcho, Inuvik, Sahtu and South Slave Regions.
- DNA material has been collected from the above collaring studies to quantify the genetic diversity within and gene flow among boreal caribou populations across the NWT.
- In September 2007, an NWT-wide analyses began using individual-based modelling to determine sustainable or unsustainable levels of impact, evaluate the response of boreal caribou to anthropogenic linear features in areas with varying levels of development impact (reduced use/ avoidance), and evaluate range fidelity and reproductive performance of boreal caribou in areas with varying levels of development impact and predation risk. Throughout the NWT, a range-wide resource selection function or habitat selection model will examine the degree of fragmentation and connectivity of selected or preferred habitats.
- Wildlife survey (boreal caribou one of the specific target species) of the Sambaa K'e candidate protected area in March 2009.

APPENDIX 2

Organizations with Legislated Responsibilities for Boreal Woodland Caribou in the Northwest Territories

- Inuvialuit Wildlife Management Advisory Council (Northwest Territories)
- Gwich'in Renewable Resource Board
- Sahtu Renewable Resources Board
- Wek'èezhìi Renewable Resources Board
- Environment Canada
- Parks Canada
- Tłı̨chǫ Government
- Environment and Natural Resources, Government of the Northwest Territories




NWT
Species
at Risk
Northwest
Territories Environment and Natural Resources